TMR-RF915R/RF945R

SERVICE MANUAL

US Model
Canadian Model

Ver 1.0 2001. 05

Photo : TMR-RF945R

TMR-RF915R is the component model block one in the MDR-RF915RK.
TMR-RF945R is the component model block one in the MDR-RF945RK.

COMPONENT MODEL NAME FOR MDR-RF915RK/ MDR-RF945RK

	MDR-RF915RK	MDR-RF945RK
Wireless Stereo Headphones	MDR-RF915R	MDR-RF945
Transmitter	TMR-RF915R	TMR-RF945

SPECIFICATIONS

General

Carrier frequency
913.5 – 914.5 MHz
Channel Ch1, Ch2, Ch3
Modulation FM stereo
Frequency response
20 – 20,000 Hz

Transmitter

Power source DC 9 V: supplied AC power adaptor
Audio input phono jacks/stereo mini jack
Dimensions Approx. 150 mm dia x 108 mm (6 x 4 1/3 in.) (w/h)
Mass Approx. 190 g (6.7 oz.)

Design and specifications are subject to change without notice.

TRANSMITTER

9-873-139-11
2001E0200-1

Sony Corporation
Personal Audio Company
Shinagawa Tec Service Manual Production Group

SONY®

SECTION 1
GENERAL

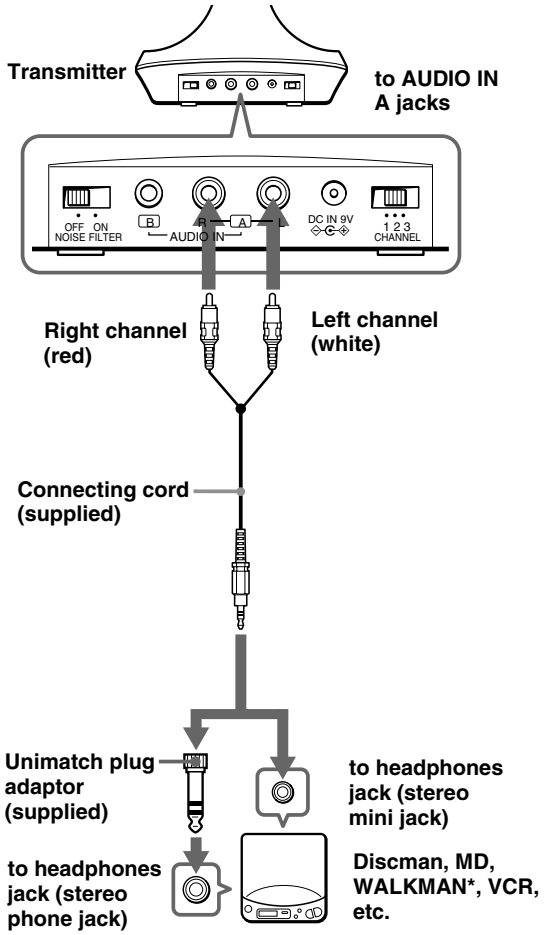
This section is extracted from instruction manual.

TABLE OF CONTENTS

Setting up the transmitter

1 Connect the transmitter to audio/video equipment. Select one of the hookups below depending on the jack type:

Ⓐ To connect to a headphones jack



SAFETY CHECK-OUT

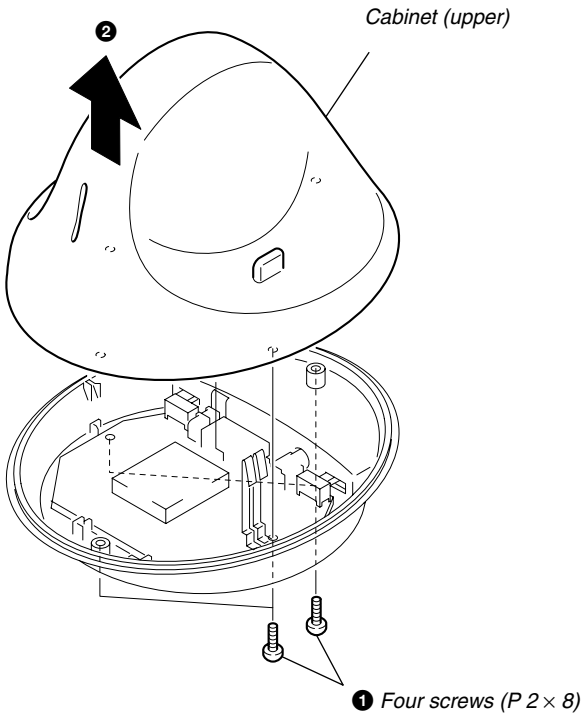
After correcting the original service problem, perform the following safety checks before releasing the set to the customer.

1. Check the area of your repair for unsoldered or poorly-sol deredconnections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularlyt ransis tors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, through functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit Board Repairing
   - Keep the temperature of the soldering iron around 270°C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering

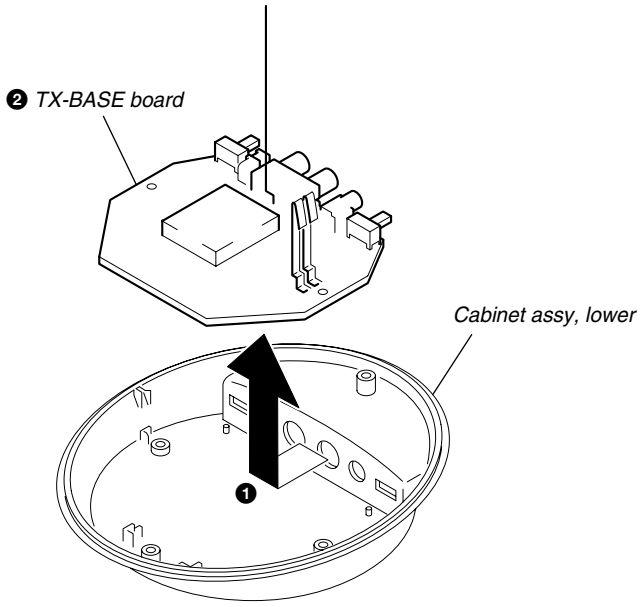
SECTION 2
DISASSEMBLY

• This set can be disassembled in the order shown below.

2-1. CABINET (UPPER)

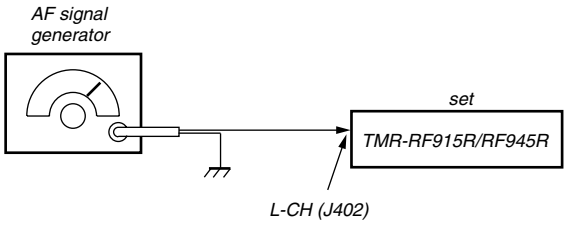


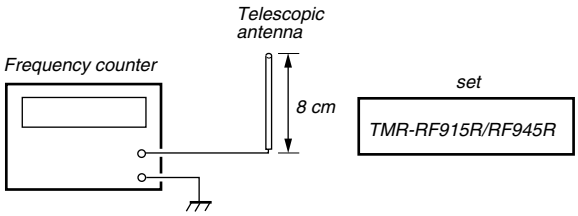
2-2. TX-BASE BOARD



SECTION 3
ELECTRICAL ADJUSTMENTS

Setting :





Transmission Frequency Check

1. Set the noise filter SW to OFF.
2. Input a signal of 1 kHz 40 mVrms to only the L-CH (J402).
3. Connect a telescopic antenna to the frequency counter input and extend the antenna to a length of approximately 8 cm.
4. Place TX-BASE board close to the frequency counter, then measure the frequencies of CH1, CH2 and CH3 and make sure the values are as follows:

   CH1 : 913.5 MHz ± 200 kHz
   CH2 : 914.0 MHz ± 200 kHz
   CH3 : 914.5 MHz ± 200 kHz

   When the frequency is not satisfied the specified value, set the channel switch (S402) to CH2, then adjust the value of the frequency counter to 914.0 MHz by trimmer capacitor in the VCO unit.

   Standard value :913.9MHz to 914.1MHz

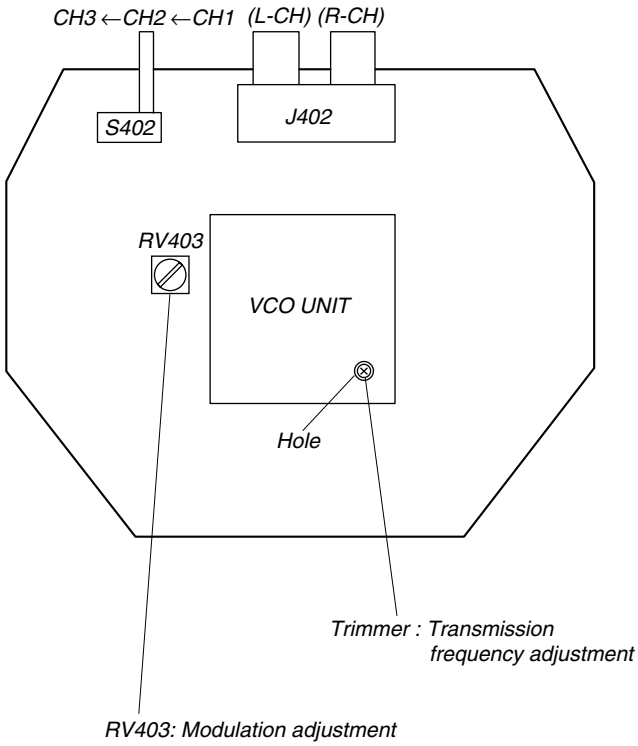
   When completed with replacement, recheck the frequencies of CH1, CH2 and CH3.

Pilot signal Modulation Check and Adjustment

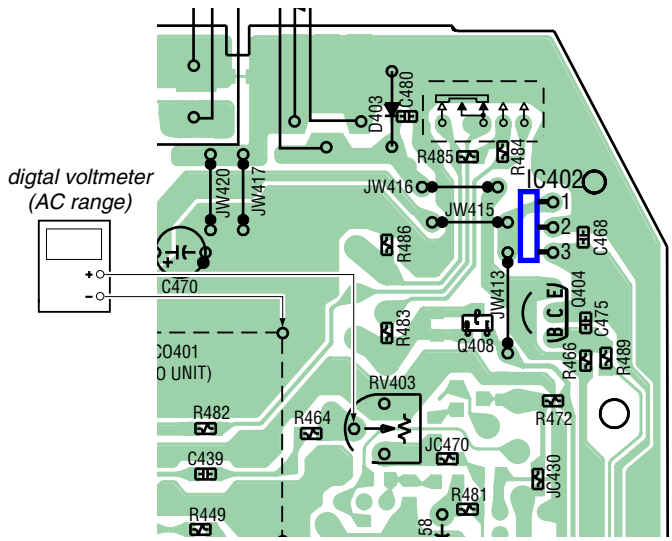
1. Set the channel to CH2.
2. An electric wave is output for 5or 10 minutes when OFF to ON a power supply (Power indicator will ON).
3. Measure the center terminal of RV403 using an digital volt-meter (AC range) and make sure the value is 2 to 2.5mVrms.
   If the measured value is other than the specified value, adjust to 2 to 2.5mVrms by turning the RV403 on the TX-BASE board.

Connection points and Adjustment Location :

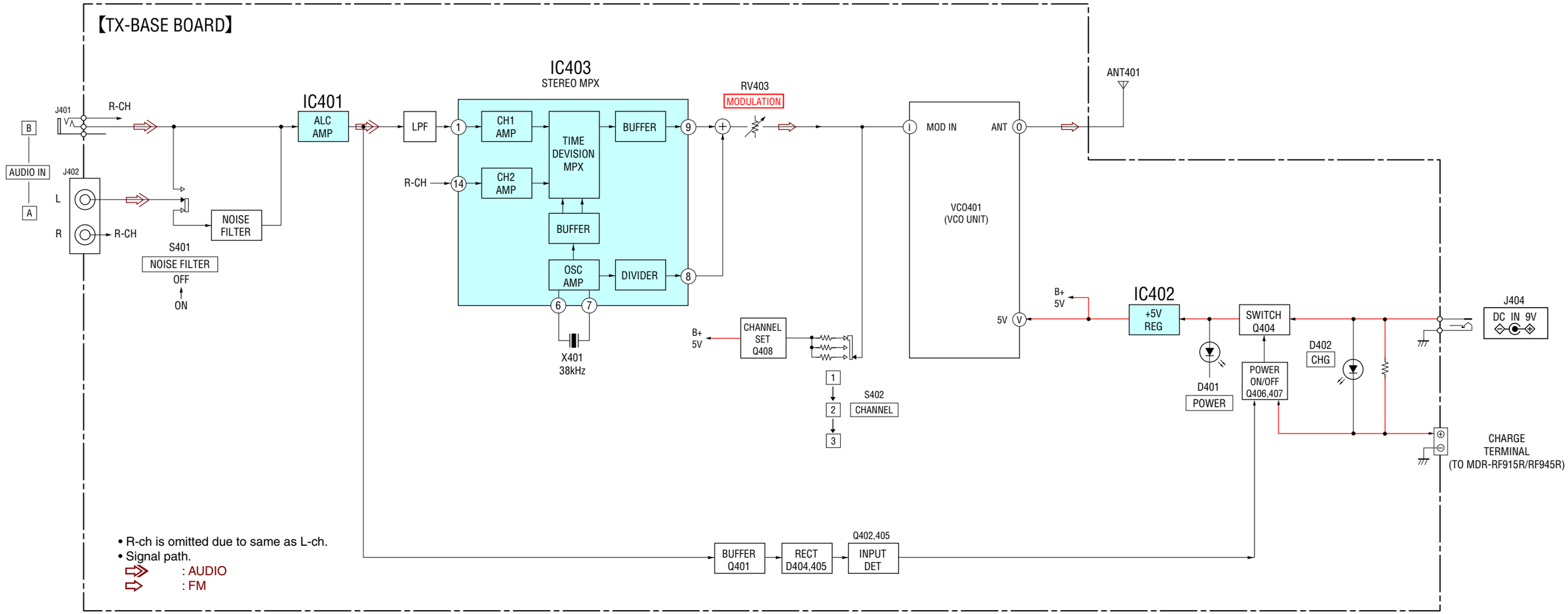
【TX-BASE BOARD】(Component side)



【TX-BASE BOARD】(Conductor side)

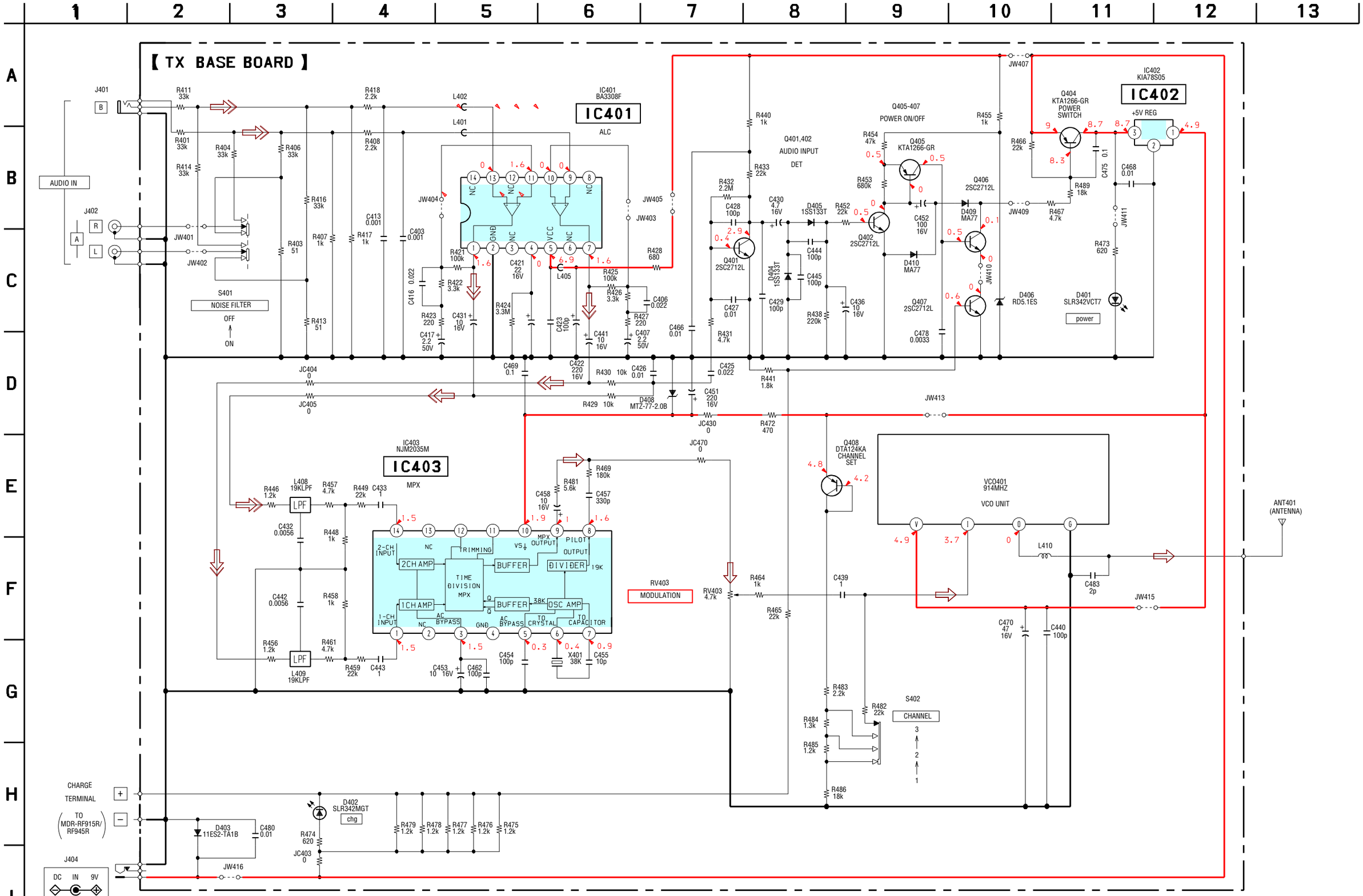


4-1. BLOCK DIAGRAMS

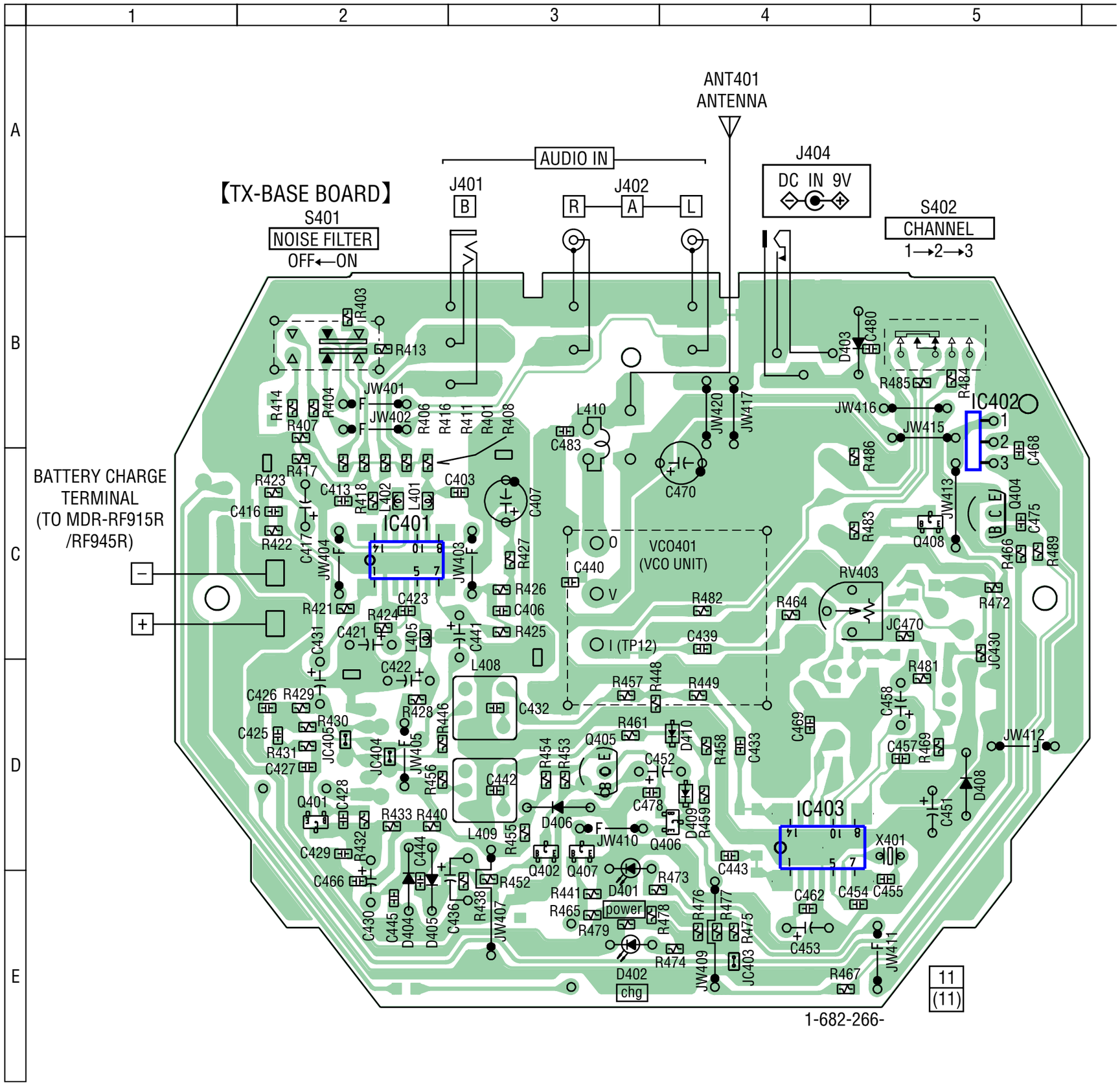


4-2. SCHEMATIC DIAGRAM

• See page 7 for Notes.



4-3. PRINTED WIRING BOARD



• **Semiconductor Location**

Ref. No.	Location
D401	E-4
D402	E-4
D403	B-4
D404	E-2
D405	E-3
D406	D-3
D408	D-5
D409	D-4
D410	D-4
IC401	C-2
IC402	B-5
IC403	D-4
Q401	D-2
Q402	D-3
Q404	C-5
Q405	D-3
Q406	D-4
Q407	D-3
Q408	C-5

Note:
- ○——— : parts extracted from the component side.
- ▬ : Pattern from the side which enables seeing.

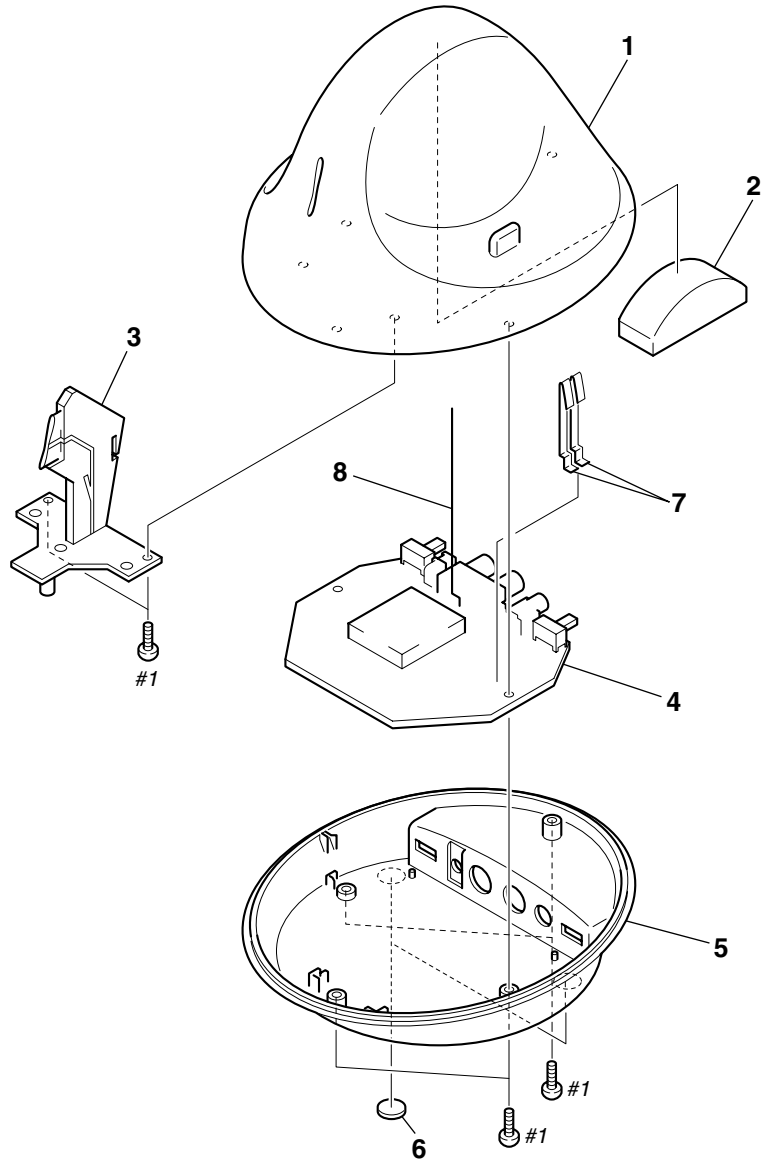
Note on schematic diagrams.

Note:
- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- ▬ : B+ Line.
- ▭ : adjustment for repair.
- Power voltage is dc 9V and fed with regulated dc power supply from external power voltage jack.
- Voltages are dc with respect to ground under no-signal conditions.
- Voltages are taken with a VOM (Input impedance 10 MΩ).

- Signal path.
  ⇨ : FM
  ⇨ : AUDIO

SECTION 5
EXPLODED VIEWS

NOTE:
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.



Ref. No.	Part No.	Description	Remarks
1	3-046-687-41	CABINET (UPPER) (RF915R)	
1	3-046-687-51	CABINET (UPPER) (RF945R)	
2	3-049-800-01	CUSHION, ANTENNA	
3	3-046-690-01	TUBE, LIGHT GUIDE	
* 4	A-3062-560-A	TX-BASE MOUNTED PC BORAD (A)	
5	X-3380-840-1	CABINET ASSY, LOWER (RF915R:US)	
5	X-3380-841-1	CABINET ASSY, LOWER (RF945R:US)	
5	X-3380-846-1	CABINET ASSY, LOWER (RF915R:CND)	
5	X-3380-847-1	CABINET ASSY, LOWER (RF945R:CND)	
6	4-984-729-01	FOOT, RUBBER	
7	3-046-689-01	TERMINAL, CHARGE	
8	4-213-164-01	TERMINAL, ANTENNA	
#1	7-685-105-19	SCREW +P 2X8 TYPE2 NON-SLIT	

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- CAPACITORS:
  uF: µF
- RESISTORS
  All resistors are in ohms.
  METAL: metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- COILS
  uH: µH

- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA...: µA... , uPA... , µPA... ,
  uPB... , µPB... , uPC... , µPC... ,
  uPD..., µPD...

When indicating parts by reference number, please include the board name.

Ref. No.	Part No.	Description			Remarks
*	A-3062-560-A	TX-BASE BOARD, COMPLETE **********			
	3-046-689-01	TERMINAL, CHARGE			
		< CAPACITOR >			
C403	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C406	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C407	1-126-961-11	ELECT	2.2uF	20%	50V
C413	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C416	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C417	1-126-961-11	ELECT	2.2uF	20%	50V
C421	1-124-234-00	ELECT	22uF	20%	16V
C422	1-126-934-11	ELECT	220uF	20%	16V
C423	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C425	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C426	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C427	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C428	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C429	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C430	1-124-259-11	ELECT	4.7uF	20%	16V
C431	1-126-157-11	ELECT	10uF	20%	16V
C432	1-163-018-00	CERAMIC CHIP	0.0056uF	5%	50V
C433	1-164-346-11	CERAMIC CHIP	1uF		16V
C436	1-126-157-11	ELECT	10uF	20%	16V
C439	1-164-346-11	CERAMIC CHIP	1uF		16V
C440	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C441	1-126-157-11	ELECT	10uF	20%	16V
C442	1-163-018-00	CERAMIC CHIP	0.0056uF	5%	50V
C443	1-164-346-11	CERAMIC CHIP	1uF		16V
C444	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C445	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C451	1-126-934-11	ELECT	220uF	20%	16V
C452	1-126-933-11	ELECT	100uF	20%	16V
C453	1-126-157-11	ELECT	10uF	20%	16V
C454	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C455	1-163-227-11	CERAMIC CHIP	10PF	0.50PF	50V
C457	1-163-003-11	CERAMIC CHIP	330PF	10%	50V
C458	1-126-157-11	ELECT	10uF	20%	16V
C462	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C466	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C468	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C469	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C470	1-126-786-11	ELECT	47uF	20%	16V
C475	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C478	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C480	1-163-021-91	CERAMIC CHIP	0.01uF	10%	50V
C483	1-163-219-00	CERAMIC CHIP	2PF		50V
		< DIODE >			
D401	8-719-059-98	LED SLR-342VC3F (power)			
D402	8-719-048-87	LED SLR-332MGTB7 (chg)			
D403	8-719-200-82	DIODE 11ES2			
D404	8-719-991-33	DIODE 1SS133T-77			
D405	8-719-991-33	DIODE 1SS133T-77			
D406	8-719-109-85	DIODE RD5.1ESB2			
D408	8-719-109-51	DIODE RD2.0ESB2			
D409	8-719-421-40	DIODE MA77			
D410	8-719-421-40	DIODE MA77			
		< IC >			
IC401	8-759-998-71	IC BA3308F			
IC402	8-759-537-90	IC KIA78S05P-TP			
IC403	8-759-667-59	IC NJM2035M(TE2)			
		< JACK >			
J401	1-566-822-51	JACK (AUDIO IN (K))			
J402	1-580-441-61	JACK, PIN 2P (AUDIO IN (A))			
J404	1-785-066-11	JACK,DC(POLARITY UNIFIED TYPE) (DC IN 9V)			
		< JUMPER RESISTOR >			
JC403	1-216-295-91	SHORT	0		
JC404	1-216-295-91	SHORT	0		
JC405	1-216-295-91	SHORT	0		
JC430	1-216-295-91	SHORT	0		
JC470	1-216-295-91	SHORT	0		
		< COIL >			
L401	1-414-234-22	FERRITE	0uH		
L402	1-414-234-22	FERRITE	0uH		
L405	1-414-234-22	FERRITE	0uH		
L408	1-419-079-21	COIL (MPX FILTER)			
L409	1-419-079-21	COIL (MPX FILTER)			
L410	1-419-662-12	COIL, AIR-CORE			
		< TRANSISTOR >			
Q401	8-729-200-72	TRANSISTOR 2SC2712L-TE85L			
Q402	8-729-200-72	TRANSISTOR 2SC2712L-TE85L			
Q404	8-729-045-00	TRANSISTOR KTA1266GR-AT			

TX-BASE

Ref. No.	Part No.	Description			Remarks
Q405	8-729-045-00	TRANSISTOR	KTA1266GR-AT		
Q406	8-729-200-72	TRANSISTOR	2SC2712L-TE85L		
Q407	8-729-200-72	TRANSISTOR	2SC2712L-TE85L		
Q408	8-729-040-78	TRANSISTOR	DTA124GKA-T146		
		< RESISTOR >			
R401	1-216-085-00	RES-CHIP	33K	5%	1/10W
R403	1-216-018-00	METAL CHIP	51	5%	1/10W
R404	1-216-085-00	RES-CHIP	33K	5%	1/10W
R406	1-216-085-00	RES-CHIP	33K	5%	1/10W
R407	1-216-049-11	RES-CHIP	1K	5%	1/10W
R408	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R411	1-216-085-00	RES-CHIP	33K	5%	1/10W
R413	1-216-018-00	METAL CHIP	51	5%	1/10W
R414	1-216-085-00	RES-CHIP	33K	5%	1/10W
R416	1-216-085-00	RES-CHIP	33K	5%	1/10W
R417	1-216-049-11	RES-CHIP	1K	5%	1/10W
R418	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R421	1-216-097-11	RES-CHIP	100K	5%	1/10W
R422	1-216-061-00	RES-CHIP	3.3K	5%	1/10W
R423	1-216-033-00	METAL CHIP	220	5%	1/10W
R424	1-216-133-00	RES-CHIP	3.3M	5%	1/10W
R425	1-216-097-11	RES-CHIP	100K	5%	1/10W
R426	1-216-061-00	RES-CHIP	3.3K	5%	1/10W
R427	1-216-033-00	METAL CHIP	220	5%	1/10W
R428	1-216-045-00	METAL CHIP	680	5%	1/10W
R429	1-216-073-00	RES-CHIP	10K	5%	1/10W
R430	1-216-073-00	RES-CHIP	10K	5%	1/10W
R431	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R432	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
R433	1-216-081-00	METAL CHIP	22K	5%	1/10W
R438	1-216-105-91	RES-CHIP	220K	5%	1/10W
R440	1-216-049-11	RES-CHIP	1K	5%	1/10W
R441	1-216-055-00	METAL CHIP	1.8K	5%	1/10W
R446	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R448	1-216-049-11	RES-CHIP	1K	5%	1/10W
R449	1-216-081-00	METAL CHIP	22K	5%	1/10W
R452	1-216-081-00	METAL CHIP	22K	5%	1/10W
R453	1-216-117-00	METAL CHIP	680K	5%	1/10W
R454	1-216-089-91	RES-CHIP	47K	5%	1/10W
R455	1-216-049-11	RES-CHIP	1K	5%	1/10W
R456	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R457	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R458	1-216-049-11	RES-CHIP	1K	5%	1/10W
R459	1-216-081-00	METAL CHIP	22K	5%	1/10W
R461	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R464	1-216-049-11	RES-CHIP	1K	5%	1/10W
R465	1-216-081-00	METAL CHIP	22K	5%	1/10W
R466	1-216-081-00	METAL CHIP	22K	5%	1/10W
R467	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R469	1-216-103-00	METAL CHIP	180K	5%	1/10W
R472	1-216-041-00	METAL CHIP	470	5%	1/10W
R473	1-216-044-00	METAL CHIP	620	5%	1/10W
R474	1-216-044-00	METAL CHIP	620	5%	1/10W
R475	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R476	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R477	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R478	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R479	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R481	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R482	1-216-081-00	METAL CHIP	22K	5%	1/10W
R483	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R484	1-216-052-00	METAL CHIP	1.3K	5%	1/10W
R485	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R486	1-216-079-00	RES-CHIP	18K	5%	1/10W
R489	1-216-079-00	METAL CHIP	18K	5%	1/10W
		< VARIABLE RESISTOR >			
RV403	1-241-763-11	RES, ADJ, CARBON 4.7K (MODULATION)			
		< SWITCH >			
S401	1-771-961-11	SWITCH, SLIDE (NOISE FILTER)			
S402	1-771-962-11	SWITCH, SLIDE (CHANNEL)			
		< VIBRATOR >			
X401	1-781-850-11	VIBRATOR, CRYSTAL			

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REVISION HISTORY

Clicking the version allows you to jump to the revised page.
Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.0	2001.05	New